

## ABSTRACT

The objective of this invention is to provide a DC-DC converter characterized by the fact that by correcting the loop gain corresponding to the switching of the operating mode, the variation in the output voltage that accompanies the switching of the operating mode can be minimized. Loop gain correction section 50 for correcting the gain of the feedback loop that controls output voltage  $V_{OUT}$  is used, so that when the operating mode is switched in response to change in the input voltage  $V_{IN}$ , the gain of the feedback loop is reduced by means of loop gain correction section 50. As a result, the duty ratio of pulse-width modulation signal  $V_{PWM1}$  output from pulse-width modulation portion 20 is decreased, and output voltage  $V_{OUT}$  is controlled to be reduced. Consequently, the transient rise of output voltage  $V_{OUT}$  that accompanies the switching of the operating mode can be avoided, the stability of the output voltage can be improved, and the influence on the load circuit can be prevented.